The purpose of this letter is to transmit GEAE comments regarding the proposed rule "Corrosion prevention control program" published in the Federal Register on October 3 2002.

GE appreciates the opportunity to comment upon the proposed rule. We would like clarification regarding the applicability of this rule; specifically we would like the FAA to confirm our understanding that the CPC program would be based on the findings of FAR25.571, and that there would be no need for inspection of
i) structural elements for which failure would not be Catastrophic
ii) secondary loadpaths
iii) structural elements composed of materials not subject to corrosion

GE has no objection to the intent of this rule, but would like to point out for the record that the Benefits Analysis as published is fundamentally flawed. Future benefits analyses should be reviewed to avoid the errors cited below. The GRA analysis estimates a constant rate of corrosion related accidents, of 0.7/million flights. This is based on estimated event probabilities applied to event trees which include human error probabilities. Estimation of human error probabilities is notoriously subject to variation. The docket management system does not appear to contain a copy of the GRA risk analysis, which would have enable more detailed feedback on the GRA methodology.
A fundamental tenet of mathematical risk models is that they should be consonant with observed experience. The GRA model is contradicted by observed experience, as follows:

GRA model prediction: Rate of corrosion accidents attributed to the engine is 0.2/million aircraft flights.
GE observation: 110 million aircraft departures (GE powered fleet, 1972-2003), with no corrosion caused accidents. This would imply a rate of <.01/million aircraft flights – a factor of 20 difference. The GRA model prediction is not credible, given this observed experience. It is particularly troubling that GRA did not validate the number for the alleged largest contributor (engines) to their corrosion risk model.

GRA model prediction: Ten accidents are predicted (randomly distributed) from corrosion from 1999 to 2008.
Observation: No such accidents have occurred in 1999-2002. It is unlikely (p=.05), that the GRA risk model could still be valid

GRA model: Constant accident rate
Observation: Based on the physics of the failure mode and on the FAA's concept, the failure rate should increase with increasing fleet age.

If the FAA desires a statistical risk analysis, the correct way to approach it in this case is using a Weibull analysis, with the Aloha accident and the rest of the fleet entered as suspensions. The slope could be based on standard corrosion data, or the Weibull could be used to establish the slope. "Aging" the Weibull fleet would then provide a more reasonable estimate of the risk incurred, and could indeed be used to set inspection intervals providing the desired risk reduction. We do not ourselves have access to the fleet age distribution, but would be happy to assist the FAA in applying this approach if this would help.

Again, GE appreciates the opportunity to participate in the rulemaking process, and to assist the FAA in improving overall safety of the commercial transport fleet.